



PENDING CLAIMS

1. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

(a) providing a cell having:

(i) a reporter gene operably linked to a DNA-binding-protein recognition site;

(ii) a first fusion gene capable of expressing a first fusion protein, said first fusion protein comprising a polypeptide fragment of Smad2 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site; and

(iii) a second fusion gene capable of expressing a second fusion protein, said second fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a gene activating moiety;

(b) exposing said cell to said compound; and

(c) measuring reporter gene expression in said cell, a change in said reporter gene expression indicating said compound is capable of modulating TGF- β superfamily signalling.

2. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

(a) providing a cell having:

(i) a reporter gene operably linked to a DNA-binding-protein recognition site;

(ii) a first fusion gene capable of expressing a first fusion protein, said first fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site; and

(iii) a second fusion gene capable of expressing a second fusion protein, said second fusion protein comprising a polypeptide fragment of Smad2 covalently bonded to a gene activating moiety;

(b) exposing said cell to said compound; and

(c) measuring reporter gene expression in said cell, a change in said reporter gene expression indicating said compound is capable of modulating TGF- β superfamily signalling.

3. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

(a) providing a cell having:

(i) a reporter gene operably linked to a DNA-binding-protein recognition site;

(ii) a first fusion gene capable of expressing a first fusion protein, said first fusion protein comprising a polypeptide fragment of Smad3 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site; and

(iii) a second fusion gene capable of expressing a second fusion protein, said second fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a gene activating moiety;

(b) exposing said cell to said compound; and

(c) measuring reporter gene expression in said cell, a change in said reporter gene expression indicating said compound is capable of modulating TGF- β superfamily signalling.

4. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

(a) providing a cell having:

(i) a reporter gene operably linked to a DNA-binding-protein recognition site;

(ii) a first fusion gene capable of expressing a first fusion protein, said first fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site; and

(iii) a second fusion gene capable of expressing a second fusion protein, said second fusion protein comprising a polypeptide fragment of Smad3 covalently bonded to a gene activating moiety;

- (b) exposing said cell to said compound; and
- (c) measuring reporter gene expression in said cell, a change in said reporter gene expression indicating said compound is capable of modulating TGF- β superfamily signalling.

5. A cell for detecting a compound capable of modulating TGF- β superfamily signalling, said cell having:

- (a) a reporter gene operably linked to a DNA-binding-protein recognition site;
- (b) a first fusion gene capable of expressing a first fusion protein, said first fusion protein comprising a polypeptide fragment of Smad2 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site; and
- (c) a second fusion gene capable of expressing a second fusion protein, said second fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a gene activating moiety.

6. A cell for detecting a compound capable of modulating TGF- β superfamily signalling, said cell having:

- (a) a reporter gene operably linked to a DNA-binding-protein recognition site;
- (b) a first fusion gene capable of expressing a first fusion protein, said first fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site; and
- (c) a second fusion gene capable of expressing a second fusion protein, said second fusion protein comprising a polypeptide fragment of Smad2 covalently bonded to a gene activating moiety.

7. A cell for detecting a compound capable of modulating TGF- β superfamily signalling, said cell having:

- (a) a reporter gene operably linked to a DNA-binding-protein recognition site;
- (b) a first fusion gene capable of expressing a first fusion protein, said first fusion protein comprising a polypeptide fragment of Smad3 covalently bonded to a binding moiety,

said binding moiety capable of specifically binding to said DNA-binding-protein recognition site; and

(c) a second fusion gene capable of expressing a second fusion protein, said second fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a gene activating moiety.

8. A cell for detecting a compound capable of modulating TGF- β superfamily signalling, said cell having:

(a) a reporter gene operably linked to a DNA-binding-protein recognition site;
(b) a first fusion gene capable of expressing a first fusion protein, said first fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site; and

(c) a second fusion gene capable of expressing a second fusion protein, said second fusion protein comprising a polypeptide fragment of Smad3 covalently bonded to a gene activating moiety.

9. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

(a) providing a first polypeptide, said first polypeptide comprising a polypeptide fragment of FAST-1;

(b) providing a second polypeptide, said second polypeptide comprising a polypeptide fragment of Smad2;

(c) exposing said first polypeptide to said second polypeptide and to said compound; and

(d) measuring the level of interaction between said first polypeptide and said second polypeptide, an alteration in said level of interaction indicating said compound is capable of modulating TGF- β superfamily signalling.

10. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

(a) providing a first polypeptide, said first polypeptide comprising a polypeptide fragment of Smad2;

(b) providing a second polypeptide, said second polypeptide comprising a polypeptide fragment of FAST-1;

(c) exposing said first polypeptide to said second polypeptide and to said compound; and

(d) measuring the level of interaction between said first polypeptide and said second polypeptide, an alteration in said level of interaction indicating said compound is capable of modulating TGF- β superfamily signalling.

11. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

(a) providing a first polypeptide, said first polypeptide comprising a polypeptide fragment of FAST-1;

(b) providing a second polypeptide, said second polypeptide comprising a polypeptide fragment of Smad3;

(c) exposing said first polypeptide to said second polypeptide and to said compound; and

(d) measuring the level of interaction between said first polypeptide and said second polypeptide, an alteration in said level of interaction indicating said compound is capable of modulating TGF- β superfamily signalling.

12. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

(a) providing a first polypeptide, said first polypeptide comprising a polypeptide fragment of Smad3;

(b) providing a second polypeptide, said second polypeptide comprising a polypeptide fragment of FAST-1;

(c) exposing said first polypeptide to said second polypeptide and to said compound; and

(d) measuring the level of interaction between said first polypeptide and said second polypeptide, an alteration in said level of interaction indicating said compound is capable of modulating TGF- β superfamily signalling.

13. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

- (a) providing a reporter gene operably linked to a DNA-binding-protein recognition site;
- (b) providing a first fusion protein, said first fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site;
- (c) providing a second fusion protein, said second fusion protein comprising a polypeptide fragment of Smad2 covalently bonded to a gene activating moiety;
- (d) exposing said first fusion protein to said second fusion protein, to said reporter gene, and to said compound; and
- (e) measuring the reporter gene expression, a change in said reporter gene expression indicating a compound capable of modulating TGF- β superfamily signalling.

14. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

- (a) providing a reporter gene operably linked to a DNA-binding-protein recognition site;
- (b) providing a first fusion protein, said first fusion protein comprising a polypeptide fragment of Smad2 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site;
- (c) providing a second fusion protein, said second fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a gene activating moiety;
- (d) exposing said first fusion protein to said second fusion protein, to said reporter gene, and to said compound; and

(e) measuring the reporter gene expression, a change in said reporter gene expression indicating a compound capable of modulating TGF- β superfamily signalling.

15. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

- (a) providing a reporter gene operably linked to a DNA-binding-protein recognition site;
- (b) providing a first fusion protein, said first fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site;
- (c) providing a second fusion protein, said second fusion protein comprising a polypeptide fragment of Smad3 covalently bonded to a gene activating moiety;
- (d) exposing said first fusion protein to said second fusion protein, to said reporter gene, and to said compound; and
- (e) measuring the reporter gene expression, a change in said reporter gene expression indicating a compound capable of modulating TGF- β superfamily signalling.

16. A method for detecting a compound capable of modulating TGF- β superfamily signalling, said method comprising the steps of:

- (a) providing a reporter gene operably linked to a DNA-binding-protein recognition site;
- (b) providing a first fusion protein, said first fusion protein comprising a polypeptide fragment of Smad3 covalently bonded to a binding moiety, said binding moiety capable of specifically binding to said DNA-binding-protein recognition site;
- (c) providing a second fusion protein, said second fusion protein comprising a polypeptide fragment of FAST-1 covalently bonded to a gene activating moiety;
- (d) exposing said first fusion protein to said second fusion protein, to said reporter gene, and to said compound; and

(e) measuring the reporter gene expression, a change in said reporter gene expression indicating a compound capable of modulating TGF- β superfamily signalling.